# Fascinating
# FUCHSIAS

SWINGTIME

## Comprehensive Guide for Cultivation

### by
### Leo. B. Boullemier

KINGS RANSOM

## TABLE OF KILOWATTS FOR GREENHOUSE HEATING

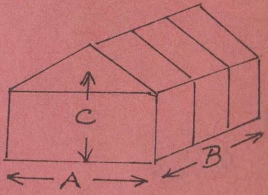
| Volume in cubic feet | SPAN ROOF | | | |
|---|---|---|---|---|
| | Temp. 40°F | 45°F | 50°F | 55°F |
| | Loading required (in Kilowatts) | | | |
| 200 | .56 | .72 | .96 | 1.20 |
| 250 | .66 | .90 | 1.20 | 1.44 |
| 300 | .78 | 1.08 | 1.40 | 1.68 |
| 350 | .86 | 1.20 | 1.44 | 1.80 |
| 400 | .90 | 1.26 | 1.68 | 1.90 |
| 450 | 1.08 | 1.44 | 1.82 | 2.20 |
| 500 | 1.12 | 1.56 | 1.92 | 2.40 |
| 600 | 1.20 | 1.60 | 2.20 | 2.50 |
| 800 | 1.44 | 1.80 | 2.40 | 2.86 |
| 1000 | 1.56 | 2.24 | 2.88 | 3.28 |
| 1200 | 1.88 | 2.54 | 3.28 | 4.00 |
| 1500 | 2.20 | 3.12 | 3.96 | 4.80 |
| 2000 | 2.88 | 3.98 | 4.86 | 6.00 |

Note: The above loadings assume the greenhouse is weatherproof and based on an outside temperature of 25°F

Note: Frost prevention (35/40°F) is generally all that is required, except for propragation purposes 55°F + and fuchsias in green leaf needing 45°F.

## TO CALCULATE THE CUBIC CAPACITY OF GREENHOUSE

Measure all the distances in feet



(a) A is the width in feet
(b) B is the length in feet
(c) C is the height in feet the
point half-way between
the ridge and the eaves
Multipling AxBxC = the volume in cubic feet

| THE pH SCALE for ACIDITY and ALKALINITY | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH Value | 4.0 4.5 | 5.0 | 5.5 6.0 | 6.5 | 7.0 | 7.5 | 8.0 over |
| Indication | Very strongly acid | Strongly acid | Moderately acid | Slightly acid | Neutral | Mildly alkaline | Strongly alkaline (uncommon) |

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## Introduction

**WHY FUCHSIAS?** To the beginner or novice, this strange searching question is easily answered. The fuchsia is one of the most outstanding plants for a continuous summer display, whether under glass or out in the open.

Not only do they flower freely, but the number of cultivars, purchased for a very modest figure, running into thousands, can be trained in ways almost legion.

Fuchsias are easy to cultivate, any good, fertile, soil will suit them and given moist conditions and atmosphere, will flourish to near perfection.

Cuttings, provided the conditions are right, may be taken at any time of the year, will root easier than most plants, a greenhouse is not necessary for its cultivation, laden with delicate and graceful blooms, whether grown as bush, standard, trailing or in baskets, the fuchsia is one of the most graceful of all plants. Probably the real reason why so many enthusiasts cultivate the fuchsia is by asking another question, what other plant needs so little attention and yet produces such satisfying results. That is the reason WHY?

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Nov. 1973.

## SHORT HISTORY OF THE FUCHSIA

It is not an old fashioned English flower as many people think, less than 200 years ago it was particularly unknown in this country.

It was discovered by the Western World in 1703 whilst an eminent botanist of the day, Father Carole Plumier, a French Jesuit missionary, seeking further sources of the cinchona tree, for quinine, found an unusual plant in the foothills of Santo Domingo, which he named after DR. FUCHS, one of the most celebrated of German botanists, *Fuchsia triphylla flore coccinea.*

How the fuchsia came to England will always be subject to conjecture, but it would appear that a certain Captain Firth in 1788, after an expedition to South America, sent *triphylla coccinea* seed to the Royal Botanical Gardens at Kew.

Little was heard of the fuchsia in this country, until the first hybrid was recorded in 1832 and the first double in 1850 by the English, after which the French, the Belgiums and the Germans became interested, but probably the heyday of the fuchsia was in late Victorian and early Edwardian days and enjoyed great popularity until the first World War. After a great set back, the Americans formed the American Fuchsia Society in 1929 and what was then known as the Fuchsia Society, was formed in 1938 in this country.

Just as both societies were making headway, the Second World War gave another check in its cultivation. When conditions returned to normal the Americans took up the fuchsia in a big way, sending over new introductions each year and not until recent years, did the British hybridisers, mainly amateurs, start to raise new introductions in any quantity. In the meantime the Fuchsia Society, which changed its name to the British Fuchsia Society, grew from strength to strength and now claims almost 5000 members. Although this society performed sterling and yeoman work, in the mid 1960's it was considered by many enthusiasts to be rather remote, with the result that the local societies were formed up and down the country.

These are now flourishing and with the help from the parent society, the fuchsia is now established as one of the most popular flowers in the country.

Most of the uninitiated think of the fuchsia either as an old fashioned English flower, or the little red and purple flower growing in the hedgerows of Devon and Cornwall, but these bear little resemblance to our modern cultivars, with their vast colour range of all colours, except the elusive yellow and the all blue.

The fuchsia is a deciduous shrub and in its natural habitat, found mainly in South and Central America, Mexico and New Zealand. These are the species, numbering some 100, found on the high, rain drenched, moisture laden, mountain slopes, or in dense evergreen forests, from prostate creeping plants to trees 30 to 40 feet high. They can be divided into the following categories:-

(a) Species, of which *F. triphylla* is one.

(b) Triphylla Hybrids

(c) Hybrids, the result of Species x Species

(d) Varieties ) Species X Hybrids
or ) or
Cultivars ) Hybrids X Hybrids

**SOILS and COMPOSTS** the medium in which fuchsias are cultivated is important, will grow in almost any soil, but poor results would be expected, if grown in ordinary garden soil.

SOIL is part of the earth's surface, 4" to 18" deep on which plant life grows, the remains of rock, decayed vegetation, animal remains, and contains HUMUS, the body of all soils and composts.

Soils are known to be clayey, sandy and chalky, often called LOAM, the mixture of clay and sand, which gardeners seek for the cultivation of their plants.

COMPOSTS are the balanced mixture of different kinds of soils for the cultivation of plants, grown in pots or containers, the word compost is confusing, having two different meanings:-

(a) the mixture of different kinds of soils, or
(b) that valuable material, made by rotting down vegetable or plant refuse.

When seeking the ideal compost, especially fuchsias, they should:-

(a) retain moisture.
(b) although moisture retaining, must be well drained.
(c) contain humus and the necessary food or fertilisers.

The ideal potting compost for fuchsias is John Innes No. 2. provided one can be certain of obtaining good John Innes compost, mixed to the formula similar to that designed in the early 1930's by Lawrence and Newall. These composts are known, apart from the seed sowing compost, as potting composts No. 1, No. 2 and 3.

The composition of these should be 7 parts loam, 3 parts peat, and 2 parts sand, all parts by bulk, not weight, to which is added 4 oz. of John Innes Base Fertiliser, the only difference between No. 1, No. 2 and No. 3 is the quantity of the added base fertiliser, No. 1 having 4 ozs, No. 2 double the amount, whilst No. 3 contains 12 ozs. These composts rely upon a high quality loam, a term erroneously given to many types of soil, must be sterilized either by steam or chemicals, not an operation to leave in the hands of the inexperienced, for a partial sterilization is much more dangerous than no sterilization.

This main ingredient should have a pH factor of 6.8, a figure to indicate either acidity or alkalinity, the figure of 7.0 pH indicates neutral state.

Finally, when John Innes composts are used, should be used within 8 weeks of mixing, after which the toxic salts accumulating in the compost, builds up into ammonia, which turns the compost sour.

It will now be readily appreciated why a good source of John Innes compost is recommended.

However, provided a good loam can be obtained, and provided you do not mind a few weeds, fuchsias will not object to unsterilized loam, mix up your own mixtures with a formula of 2 parts loam, 1 part sphagnum peat and 1 part of course sand or crushed gravel, to which is added the 4 ozs of John Innes Base fertiliser to the bushel.

There is available an alternative, in the various SOIL–LESS composts marketed under several proprietory brands, as "Arthur Bowers" "Alexpeat" "EFF" "Humber" and "Levington", all suitable for fuchsia cultivation and are generally mixed to what is referred to as the D1 mix, as recommended by the University of California, made up of 75% pure sphagnum peat and 25% pure washed Silicate Quartz sand, to which is added the necessary chemical fertilisers and balanced amounts of trace elements. The advantages are briefly, they have an indefinite storage life without deterioration, are chemically uniform and relatively inert; good water retention, does not"pack", are lighter in weight, clean and simple to handle. Disadvantage is, however, in watering, especially where plastic pots are used in conjunction with soil-less composts, easy to overwater, on the otherhand, if the compost is allowed to become really dry, is difficult to wet again and may require two, three or even four times, to get back in moist condition.

"Levington" is not favoured with some fuchsia growers, which is basically 100% peat with lime and nutrients added and maybe, found to be too loose and light, plants with average top growth can become top heavy, whilst any soil-less compost not combining a certain amount of grit or similar material, making staking a problem. It is your choice which compost you use, but for exhibition or specimen plant cultivation, would strongly recommend John Innes compost in clay pots, a final word, as both types of compost are made to specific formulas, never attempt to mix the two.

**Bushel of Compost** useful facts and figures.

1 bushel = 22 inches x 10 inches x 10 inches
= 1.28 cubic feet
= 8 gallons
= approx. 90 lbs of medium loam
= approx. 70 lbs of John Innes Compost
= approx. 45 lbs. of Soil-less Compost
= one barrow-load

1 bushel will pot on approx. 100 plants from 2″ to 3″ pots
″ ″ ″ ″ 85 plants 3″ to 4″ ″
″ ″ ″ ″ 60 plants 4″ to 5″ ″
″ ″ ″ ″ 40 plants 5″ to 6″ ″

**PROPAGATION** as a word of encouragement, the fuchsia besides being the easiest of plants to grow, is also the easiest of plants to propagate.

The three methods by which fuchsias can be reproduced, apart from the few SPORTS are:-

GRAFTING – SEED – CUTTINGS

**Grafting** is rarely used, can be of benefit where a slow growing variety or weak grower, is required as a standard.

**Seed** should you propagate by seed, time, patience and space are needed, is the only method, used to produce new varieties, bearing in mind that apart from the species, no fuchsia will come true from seed. With some 4000 to 5000 different varieties, not necessarily in cultivation, unless very selective hybridising is undertaken, the odds are considerable against, producing something different. Using ordinary seed, is more than likely the colour combination will be either the colour of their parents or red and purple. For those who wish to experiment, the sowing of seed should take place as soon as possible after the seed has ripened, with a minimum temperature of 55°F to 60°F, some hybridisers choose August and September for the operation, the time freshly gathered, but ripened seed is sown.

February and March are the next best months, although the percentage of germination will be reduced, should the necessary heat not be available, then sowing must wait until April or May. Few flowers can be expected until the second year from these late sowings, the resultant plants must be grown for a further year or two, making sure that any new characterists, if any, do not revert back to their parents.

Growing from seed can be both interesting and exciting, the ordinary John Innes Sowing Compost cannot be bettered, or alternatively, any soil less compost, or equal parts of peat and sand, the important thing is whatever medium is used, should be sterilized or inert, knowing of no other seedling which looks the same as ordinary common weed seedlings, when in the cotyedon stage.

**Cuttings** the greater number of plants grown are from cuttings, this is the only method by which an exact replica of the variety is obtained.

Provided the right conditions exist, cuttings can be struck at any time of the year and can be divided into:-

SOFT WOOD CUTTINGS – HARDWOOD CUTTINGS

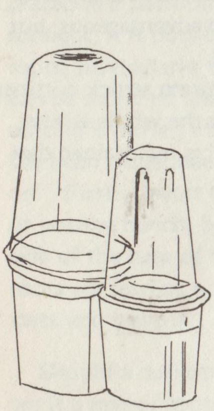
**Soft Wood Cuttings** are the best and more reliable, usually taken during the early months of the year. The medium in which the cuttings are struck is not critical and can be:-

* Crushed Gravel
* Sand
Water
Peat
Soil-less Compost
Peat and Sand
Vermiculite
J.I.Cutting Compost

* Drains quickly, but also dries out quickly.

The ideal cutting, is one with three or four pairs of leaves, trim off the bottom pairs of leaves and cut cleanly, just below a node with a sharp knife or razor blade, use rooting powder if so inclined, but fuchsia cuttings strike so readily, is not really necessary. Do not push cuttings into the striking medium, a lazy and dangerous practice, one which will damage the cuttings. Having made a hole with a blunt piece of wood, or the base of a pencil, insert cuttings ¾" to 1" below the level of the rooting medium, taking care to space out the cuttings with no leaves overlapping.

The actual container in which cuttings are struck, is again im material, some prefer shallow boxes, others prefer 3" or 4" pots, or they can be struck direct into small peat pots or strips, which ever is used, is essential that the cuttings are inserted firmly and resist a slight tug. Water in well with a fine rosed can, this settles the cuttings in the rooting medium and place in a suitable propagating frame, preferably with gentle bottom heat of approximately 55°F to 65°F, if not available, use any homemade propagator of simple design, not overlooking the vast range of perspex domes and covers marketed by Stewarts or Wards, which convert pots and seed trays into miniature propagating frames at very little cost.



*Inexpensive Propagators*

Should no propagator be available,

insert your container into a polythene bag and if using a 3" pot or similar, insert two or three short canes, to form a tent, tie tightly near the top and place in warm, but shaded position, these will need no further attention after watering in and in approximately four weeks will be rooted. If in the propagating frame, will be necessary to spray with clear water, once or twice a day, according to weather conditions, to prevent the young cutting from wilting and what is just as important, shaded from strong sunlight, two weeks or a little longer should be ample time for rooting.

Overwatering is a common cause of cuttings failing to root, when striking cuttings the important requirements are:-

(a) good drainage
(b) free root run
(c) warmth
(d) close atmosphere
(e) prevent wilting

**Hardwood Cuttings** are taken in the late summer or autumn, together with any soft or semi-soft cuttings available at that time, these cuttings are not so reliable as the early spring cuttings, it must be remembered they must be kept in green leaf throughout the winter, but do produce better and more advanced plants, for the next spring and summer flowering.

With this type of cutting, take them a little longer, a shoot 4 or 5" long, remove the bottom leaves, trim just below a joint in the same way as a soft wooded cutting, but at this time of the year, a propagating frame is not essential, being better to place in a shady corner of the greenhouse or garden frame and spray only occasionally. Very slight bottom heat could be advantageous, but cannot force these cuttings as the soft wooded.

The essential point to bear in mind with autumn struck cuttings is that they must be grown in green leaf during the whole winter, which is difficult unless a temperature of 45°F is maintained day and night.

**POTS and POTTING** pots of the clay type, not easily procured these days, are, or were, made in a variety of sizes, experienced gardeners know them by numbers, the number make up a cast, 60 three inch pots make up a cast, known as sixties, whereas the ten inch pots, a dozen to a cast, are called twelves, most amateurs just call the pots a "three inch" "five inch" and so on. These traditional clay pots are still popular, produce excellent results, have a pleasant earthy appearance, tell you when the plant wants watering, by "ringing" when tapped with the knuckles and maintain that when growing specimen plants, still prefer to use these traditional pots and if the old hand-thrown type can be located, all the better. However, plastic pots are more popular and whether liked or not, are here to stay; they are virtually indestructable, although if exposed to frost will become brittle, are light and easily cleaned. They do require a completely different technique in management, although labour saving, in that their much lower porosity reduces the need for watering, the beginner tends to over-water his plants in plastic pots and finds plants going sick. They do not support mould or algae, provide a more uniform moisture and temperature and the smooth interior permits easier knocking out.

Disadvantages do include being lighter than clays, plants with excessive top growth can become top heavy, especially if used in conjunction with peat based composts; if plants in plastics are placed in a position where they receive prolonged or excessive sunlight, it is possible, with the heat the pots cannot disperse, the roots, particularly the fine hairy roots around the side of the pots, can be scorched and burnt. As a general rule a small plant from a cutting is moved into a 2" pot and when a fair amount of growth has been made, needs moving into 3" pots, a term used as "potting on". Firstly invert the pot, giving it a smart tap against the staging or potting bench, but placing the first and second fingers each side of the base of the plant, knock out the plant; if hardly any roots are seen or none at all, pop the plant back to its original state and leave it.

Should a definite root pattern all round the ball of soil, pot on; if a mat of roots, potting-on was well overdue, bearing in mind it should not happen again, because as the plant has so suffered, can induce premature flowering. This potting on should continue as growth progresses, advocating a move into pots, only one inch larger at a time, from a three to a four, four to a five and so on.

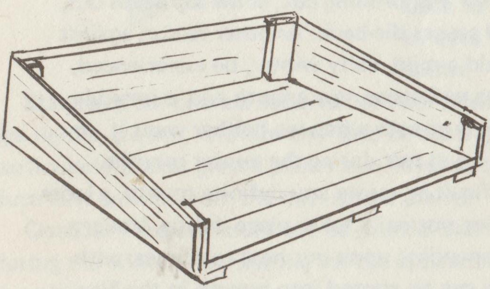
You may well ask the question "why all this waste of time and effort, why not put the small plant into the size pot it will eventually need"? The answer is that the soil in a pot does not obtain the benefit of the weather and worms, like soil in the open, in its confined space and constant watering, it tends to pack together, loses its air spaces and most important, will become sour, unless the soil is kept open, by the action of the plant's active roots. As mentioned previously, the ideal compost for potting on, is John Innes compost, generally speaking, for potting on into 3" pots No. 1 is ideal, for 4" and 5" pots No. 2 is most suitable and No. 3 for large pots and fully matured plants. For potting up established plants, make sure pots are clean, if new clay pots, making sure they have been soaked overnight. In the case of clay pots, few crocks over the drainage hole, for plastics, crocks are not necessary. Over the crocks, place half an inch of rough peat or fibre, this prevents the good compost being washed out, or packing down around the drainage hole and preventing the proper passage of water.

Next step, take your plant from the old pot, which should have been watered the previous day, gently break the sharp edge of soil and if the roots are matted, carefully tease out some on the outside. Hold the plant in the pot, at the right height, gradually fill in the compost with the other hand, when the pot is about two thirds full, tap the bottom of the pot two or three times on the bench, to settle in the compost. Fill to within half an inch of the pot's rim, if a small pot, and almost an inch, if the pot is five inches or more, this space is needed for watering. Firm the compost down all round with the fingers, thumbs never, these create too much pressure; only gently firming if the plant is young, more strongly, as the size of plant and pot increases, never use a rammer for fuchsias. Give the plant a good watering and stand the newly-potted plant in the shade, under the staging is a good place, for them to get over the check, for two or three days, then start or continue with your regular spraying and watering routine when necessary.

## SOIL LEVEL IN POTS

| Pot Size | Space Between Soil Level and Top of Pot |
|---|---|
| 3 inches | ½ inches |
| 4 ″ | ½ ″ |
| 5 ″ | ⅝ ″ |
| 6 ″ | ¾ ″ |
| 7 ″ | ⅞ ″ |
| 8 ″ | 1 ″ |
| 10 ″ | 1¼ ″ |
| 12 ″ | 1½ ″ |

**POTTING BENCH** a most useful and essential piece of equipment in the greenhouse, even experienced growers manage with any old make-shift bench or table, makes the task of potting and repotting difficult. Skilled carpenter or expensive material is not needed for the potting bench, which can be made portable for storing under the staging when potting is completed. A suitable size would be 24″ wide 18″ deep of ¾″ or 1″ thickness. Should the professional touch be needed, as also for cleanliness and tidiness, line the base with sheet zinc and copper tacks.



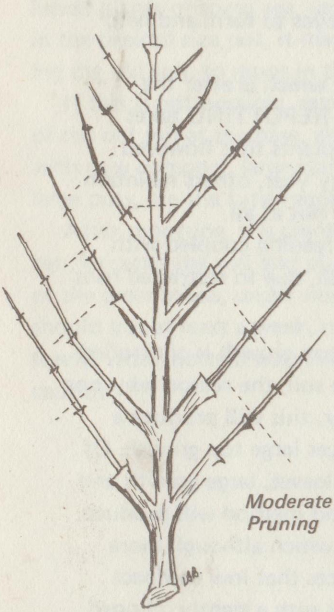
**PRUNING** why do we prune fuchsias? to control the size of the plant and to make sure of plenty of new wood. As the fuchsia only blooms on new wood, growth from the base, especially bush and trailers should be encouraged, pruning will assist this growth; bear in mind the fuchsia is a shrub, needing three months or so complete rest, after this rest, pruning the old wood forces the new growth.

Before continuing, it is necessary to explain one of the important aspects of cultivation, which should be carried out during the early autumn months. During September to early November, our plants should finish their flowering naturally, if possible to stand them outside, or if left in the greenhouse, to give full ventilation, for the essential function of ripening the soft green growth, made during the summer.

Plants ripened off will stand a much better chance of surviving the winter, than plants with soft growth and sap still high in the stems.

Should it be necessary in early autumn, to indulge in a slight or moderate shapening in order to house plants, little harm will be experienced. However, with either moderate or hard pruning at this time, you can expect excessive die-back, particularly on any unripened wood, the reason is because once the sap is high in the stem, or flowing, after any pruning cut, some sap seeps out, spreads downwards and causes die-back. Another reason against autumn pruning is should a mild, early winter, be experienced, the operation of pruning will cause new growth and is possible for our plants to have new growth when we neither want it, or desirable, plants should be at rest during the winter months. When do we prune? difficult to quote any definite month, a loose answer being that pruning normally takes place during January, February and March, depending upon our heat resources; with considerable heat plants can be started into growth in the New Year, with moderate heat a month later and with little heat or having to rely on the sun's rays, plants left until March time. The short answer to when we prune, is just before the sap starts to rise, this is why most experienced growers do not advocate autumn pruning, some growers have, however, evolved a successful method of autumn pruning, are presumably happy, but it must be executed when the sap is falling and cuts made must dry quickly.

Returning to "just before the sap starts to rise" method, provided the plants have been sprayed over, as soon as conditions permit, with tepid, clear water, new growth buds will have developed enough to indicate, where the new shoots will come, it is at this time pruning should be made, as the appearance of these buds will enable us to shape our plants. Where and how do we prune? the general principal to adopt is to cut back about 2/3's of the previous years growth, which in most cases will leave two or three joints or nodes on each lateral.


*Moderate Pruning*

To explain it another way, cut out all dead wood, spindly growth, pruning back to two or three pairs of eyes from the main stems.

Standards are pruned back harder than bush plants to encourage tighter growth, without any gaps or open spaces, trailers and particularly basket grown plants also need hard pruning, to produce new growth from the base of the plants.

Outdoor hardies should not be pruned back in the autumn or during the winter, but waiting for the appearance of the new growth at the base in the early spring, then pruning back hard, to almost soil level.

**REPOTTING** overhead spraying of old plants should commence as early as possible in the year, usually the end of February, but according to weather conditions. This method of supplying moisture, to the awakening plant is preferred to heavy watering, which as yet, inactive roots cannot cope with. The object of spraying is to soften the wood, encourage the eyes to form and help the resultant green shoots.

Just as these new green shoots appear, which is after the pruning operation, the important task of REPOTTING takes place. Some successful growers advocate plants that flowered the previous year should be repotted every year, others maintain a method of repotting every two years or not at all.

With this latter method, means heavy feeding coupled with hard pruning which results in **short growth,** due to restricted root growth.

Botanists will tell you the amount of top growth is controlled by the amount of growth underneath the soil, the reason why one prefers the method of repotting each year, this will produce a larger root growth, which in turn, produces large top growth. Of the two methods, one will produce large leaves, large growth and naturally large flowers, whereas the second method will produce much smaller leaves, but smaller flowers which although more numerous, with the hard pruning, produces that low compact growth, which can at times, be compared with a tightly, clipped, privet hedge or a plant resembling flowers on a pin cushion.

From experience, have proved repotting to be the better method, repotting is an important operation, a completely different procedure to potting or potting-on. The plant which flowered the previous year should have most of the old soil removed, an old but strong plant label is useful for this task, try not to damage any new roots just forming, distinguishable by being white in colour, as opposed to the old brown roots, any damaged roots or excessive root growth can be pruned, but be careful with tap roots, as these bleed if cut.

After this operation, plant back into a pot, slightly larger than the ball of roots and soil left on the plant, using fresh compost and clean pots. This operation usually means repotting into a pot one size smaller and until the plant is again growing vigorously, do not want too much soil unoccupied by roots, which can result with overwatering, with the soil turning sour. In many instances, have repotted from 6″ to 4″ and from 5″ to 3½″. When the plant has roots nicely running around the side of the pot, the plant can then be potted up in the normal way. Repotting should be carried out as necessary, throughout the life of the plant, but with established plants of some age, usually in large pots, once established in the desired size pot, it maybe necessary after carefully removing the old soil, to repot in the same size pot.

If this is not possible, remove the crocks and a certain amount of the old soil at the base, also the top two inches and replace with new compost, large standards and specimen plants in tubs or large pots, are the type requiring this treatment.

After repotting, the plants should be watered well, with a rosed can, to settle the soil and placed in the warmest and shadiest part of the greenhouse, under normal conditions, this initial watering should last at least a week, until the plants are growing away freely, when normal watering can be resumed, but with care and caution.

**FEEDING** fuchsias are gross feeders and can only be healthy when provided with a balanced diet. When bedded out, such a condition may occur in nature; when grown as pot plants, have to supplement the resources of the soil or compost, to provide all the raw materials, which cater for the complete diet of the plants. The basic requirements are nitrogen, phosphates and potash, generally referred to as "N–P–K".

**Nitrogen (N)** is essential, especially in early stages of growth, stimulates the growth of leaves and increases the size of the plant, Bonemeal, hoof and horn meal and dried blood, are all organic substances supplying nitrogen, whilst chemicals, such as sulphate of ammonia and nitrate of soda, will give a rapid release of nitrogen, but should be used sparingly.

**Phosphates ($P_2 0_5$)** stimulates the necessary root and stem development, speeds up flowering.

**Potash ($K_2 0$)** is most essential for fuchsias, without it, plants cannot make full use of the nitrogen for leaf and stem growth, whilst it helps to prevent soft growth; potash improves the colour of the flower and increases resistance to disease. Potash is required when our plants are coming into bud and especially in flower. Fuchsias must be fed especially when established, if not, will produce fewer and smaller blooms, even of poorer colour. By continuous, balanced feeding, flowering will be maintained and if required, prolonged over the normal flowering period, even into October and November. Feeding can commence in a weak form, from a young plant in its initial 2¼" pot and continued throughout the growing season.

Fertilisers with a high nitrogen content, such as "Compure" should be used in the early stages of growth, switching over to a high content potash, such as "Compure K" when the plants are in bud and flower. It is wise to standardize upon a certain strength at the commencement of the feeding programme, to increase the amount by more frequent applications, instead of increasing the dose, or strength. Never feed plants dry at the roots, this will burn up all the small hairy roots, or sick plants.

Fertilizers are divided into two categories, ORGANIC and INORGANIC, the former, obtained from animal or vegetable origin, whilst the latter are artificial, both are classified as MAJOR PLANT FOODS, all contain various amounts of N–P–K.

Proprietary fertilisers contain these major foods, the strength is usually quoted on the label, for example, 9–6–4 would indicate the percentage of Nitrogen Phosphates and Potash in that order, 9%N – 6%P – 4%K. Typical examples are as follows:-

| | | | |
|---|---|---|---|
| COMPURE | 9.3%N | 6.8%P | 4.2%K |
| COMPURE "K" | 4.0%N | 4.0%P | 7.0%K |
| LIQUINURE | 9%N | 6.6%P | 4.1%K |

TRACE ELEMENTS are essential for good cultivation, usually a large reserve is found in all soils, the important one, especially for fuchsias is MAGNESIUM.

The shortage of this element is indicated with leaves with yellow spots and streaks, usually the lower leaves, which eventually drop off.

Plants which have been grown in the same compost, often exhaust this supply of magnesium, especially where old plants are not repotted.

The remedy is simple, one large tablespoon of Epsom salts to the gallon of water, applied two or three times during the growing season.

**Organic** fertilisers, some growers believe these contain high food value, but are in fact very low in N.P.K. Farmyard manure for instance contains only 0.77%N, 0.39%P and 0.60%K, in fact, it is impossible, short of chemical analysis, to show whether they contain the right amounts of "NPK". Apart from the lower value of feed, this is the chief disadvantage with organics, whether it be farmyard, stable, pig, cow or sheep manure, they do, however, provide humus and a small amount of some of the trace elements, but little to offer as a plant fertiliser.

**Special Applications** as boosts and tonics:-

Foliar Feeding can be beneficial, when sprayed at intervals of one or two weeks, nothing exceptional about this method of feeding and considered good, only as a tonic feed. Where rapid growth is required, such as the quick running up of a standard or conical, Sulphate of Ammonia with 20.60%N or Dried Blood 12% to 13%N. Quick boost for backward plants, or to bring on show specimen plants quickly from bud stage, use Nitrate of Potash (Saltpetre), contains high ratio of both "N" 12½% and "K" 40%, in a form quickly absorbed and almost immediate, the application being ½ teaspoon per pot, watered in, but used sparingly, puts a lot in, but also takes a lot out, of the plants.

For quick ripening, Sulphate of Potash 48.8%K at the rate of ½ teaspoon to the gallon of water added to the general fertiliser, during August and September will assist in the important function of ripening the wood. **Soot** is a straight fertiliser and although containing only a small proportion of Nitrogen, also contains a certain amount of Sulphur and a useful amount of trace elements. When watered down to the colour of weak tea and applied freely as a feed, improves the colour of the blooms and imparts a sheen to the foliage. Soot must be stored and weathered before use and never used "hot".

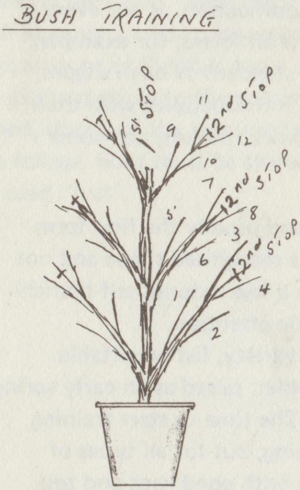
**TRAINING TO VARIOUS SHAPES** the fuchsia is probably the most adaptable of shrubs, can be trained to all recognised forms, but bearing in mind, in its natural habitat, grows from creeping prostate plants, to very high trees, we in this country have to grow it artificially, hence the reason for training.

This fact, however, needs a little modification, as not every specie or variety will necessarily assume all forms, for example, most of Lyes varieties will make good standard or bush shapes, whereas the majority of the American introductions, with their lax habit, are ideally suited to basket work, trailers, and some for weeping standards.

**Bush** this is the easiest shape to train and usually the first form the beginner attempts, it is, however, a recognised shape and not something that just happens, although a few natural, self-branching varieties, will make plants with little attention.

Firstly we require a fairly vigorous variety, list of suitable varieties is listed elsewhere in this booklet; raised as an early spring cutting, or one struck in the autumn. The time to start training, and this applies not only to bush training, but for all types of training, is when the cutting has made both good root and top growth, whilst in its first or second pot, usually either in its 2" or 3" size. When the plant has developed three pairs of leaves, remove the centre growing tip, which is the first stop or pinch. This action will encourage side shoots to develop and when these have made two pairs of leaves, these are stopped, which now means that instead of just one shoot, we already have six.

From these resultant six shoots, all will break again and the tips are pinched at a further two pairs of leaves; this is our second stop and have now not six, but 24 shoots. This for normal decorative use is usually sufficient, but should large specimens or plants required for the show bench, this stopping procedure can be continued until the grower is satisfied with the amount of stopping, needed for his purpose. It can be mentioned that keen growers, especially the exhibitors, stop their plants after the initial stopping, at one pair of leaves and this operation is carried out many times, until the ultimate size of the plant is made. It is well to mention at this stage, but explained more fully under the heading of Stopping, that each stopping made, prevents flowering for approximately two months, a very rough guide is 6 to 7 weeks for singles and 8 to 9 weeks for doubles, from the time the last stop is made. It is important that all shoots are stopped at the same time, otherwise half the plant will be in flower and the other half, in either leaf, or small bud stage. Whilst the training is taking place, other points of cultivation must be carried out, the cutting having been struck in any suitable medium, needs a good compost such as John Innes No. 1 for its first and second potting, or as an alternative, any good proprietary soil less compost, reference here can be made to the chapter on Soils and Composts. It is essential to keep the plant growing steadily, by repeated shifts in pots, of gradually increasing size, from 3″ to 4″ pots; at this stage, John Innes No. 2 can be the strength of compost and when moving even larger, from 4″ to 5″ and from 5″ to 6″.



*Stop at 3 pairs of leaves*
*Pinch again at each 2 pairs*
*Result — 24 side shoots*

On current growth, that is first year plants, a 5″ inch pot will be large enough, but with very vigorous varieties, maybe possible to finalise in a 6″ pot. At each stage of potting-on, plants should be protected from excessive sunlight, for two or three days to overcome the check; after watering place in the shadiest part of the greenhouse, under the staging being an ideal situation.

Another aspect of cultivation overlooked by many, is the turning routine especially for bush plants; from the time the plants are growing in their 3″ pots, each and every plant needs to be turned a half turn, every third day, this will prevent one sided plants; a well grown bush must be symmetrical, with even growth when viewed from any angle.

Try to prevent soft growth and long shoots, which will not carry the weight of blooms without bending, or the need for excessive staking, by growing the plants as hard as possible, this will entail controlling the greenhouse temperature, giving full ventilation and carefully spacing out plants, not letting any leaves of one plant overlap the other.

They will in fact, benefit with a spell out of doors in a suitable position, when established, or when the stopping procedure is completed.

**Standards** the enthusiast usually attempts the standard as the next type of growth, these are in fact, bush plants growing on a stem of desired length. The measurements defined by the British Fuchsia Society, as the length of clear stem from soil level to the lowest branch are:-

12 to 18 inches for quarter standards
18 to 30 inches for half standards and
30 to 42 inches for full standards

One does not have to adhere to these measurements, but are defined by which standards can be regulated, for judging purposes and what is more important, to obtain a better balance to the plant. Select the early, green tip, cutting, of a strong upright variety, such as "Snowcap" or the others listed elsewhere, or if deciding upon a weeping standard, a variety like "Marinka".

Some varieties like "Checkerboard", often throw three leaves in the leaf axis instead of the normal two; if fortunate in selecting these types, even better specimens will ultimately result. The cutting is grown on unchecked without stopping, from the initial 2" pot; when it becomes necessary to pot on into the 3" pot, sufficient growth will have been made to need early support. This is important, when 4" to 6" of stem has been made, a cane fairly close to the stem is inserted and tied not too loosely, at intervals of 2" throughout the period of training, although tedious, this will ensure a straight stem, when the desired height has been attained.

Whilst height and rapid growth is being achieved, attention must be paid to the turning procedure, as described under the training of the bush, this will ensure even growth, as all plants especially under glass, will grow towards the maximum light. The next stage is important, whilst this growth takes place, all the side shoots appearing in the leaf axis are removed, or rubbed out, but retaining the leaves, these are not removed until the intended height and ultimate top growth has been achieved; the leaves are required for breathing and feeding.

When removing these side shoots, **always** leave the uppermost two or three pairs of shoots on the stem, the object from now on is to obtain very rapid and unchecked growth, this is achieved by constant potting on, increasing the size of the pot, an inch at a time. Constant attention must be paid to the condition of the roots within the pot; as soon as they have worked themselves around the outside, the plant must be moved into its next size pot. Should the young whip, which it is now called, become pot bound, it will have the tendency to bud or even flower, this **must** be prevented during the stage of attaining the desired height. If the plant develops either bud or flower, practically all upright growth will cease and the removal of buds or flowers,will act as a stop.

The ultimate aim with regard to final pot sizes, should be 6" final for quarter, 7" for half, and 8" or larger, or even tubs, if so desired for full standards. Feeding should not be overlooked, nitrogen feed during training period will assist in the rapid growth; when potting on, always increase the length of cane or support, some 6 to 12 inches above the achieved height. Just before the desired height is made, make sure of having at least 3 pairs of leaves at the top, when the aspired height is achieved, grow on until 4 pairs of leaves have developed **above** the desired height, these must be retained to develop into the head. Now is the time to make the definite stop, by removing the leader, or the uppermost terminal shoot. The ideal number of side shoots left at the top is 4 pairs, although 6 pairs can be retained if so desired; these are left to grow exactly the same as on a bush plant, being stopped at each two pairs of leaves, usually 3 or 4 stops are all that is necessary to achieve a well developed head, for a very "tight head" one would advocate stopping after each pair of leaves, after the initial stopping of two pairs.

When the finished standard has been achieved, the depth of the head should be approximately one third of the total height, and the width should be about two thirds of the total height. Should during training, the ultimate standard not have been made by the winter months, it will be necessary to keep it in green leaf, ready for completion the next spring onwards. When considering winter care for established standards, it is well to create a little higher temperature for resting purposes, 38°F to 40°F being preferred, as these tall plants are more susceptible to frost and lower temperatures, than the smaller types of growth. Pruning should be carried out in the earlier months of the year and pruned back harder than a normal bush plant; this will prevent the bare spaces and room for "birds to nest there in" as one often sees on standards, even on show benches.

**Baskets** unquestionably well grown baskets are both spectacular and eye catching. The basic principles to obtain specimen baskets are, that plant growth should fill the centre and top of the basket; continuing to surge over the edge, in a sweeping cascade effect; growth should be uniform with clean foliage and an abundance of bloom, which should obscure the basket. The ideal time for planting is late March or early April, the reason for this early start is the long period of growth needed to produce healthy, trailing stems.

My experience has proved baskets are much better grown on current growth, discarding all old baskets and starting each year with new plants. Baskets used can be of various sizes and material, between 10 and 15 inches and can be of galvanised wire type, or plastic covered. Regarding actual varieties, consider it more correct to plant one variety instead of mixing, as growth and balance, coupled with flowering, are more easily maintained, recommending to plant 3 or 4 young plants in a 10", 4 in a 12" and 5 or 6 in a 15" basket.

Suitable varieties are now numerous and although "Marinka" and "Cascade" are automatic choices, why not be a little more imaginative and consider the list detailed under Varieties, especially "Lakeside" and "La Campanella". Although not necessary, to obtain the finest results, would advocate plants produced from autumn cuttings, should these not be available, select plants grown from early tip cuttings, obtained from specialised nurserymen, if your own plants are not early enough, and stop after three pairs of leaves. From then on the pinching procedure is easy to remember, pinch out at every resultant three pairs of leaves. This action will ensure those healthy trailing stems, after the third or fourth pinching, patience will be needed with any further pinching, which although not necessary, will produce even better specimens.

When planting the baskets do not try and perform the operation on the kitchen table, will only result in upsetting both the wife and the basket. As the basket has a round bottom, half baskets are even worse, which can be treated in pairs; better to place the basket in a large flower pot 10 or 12" in diameter, or some kind of bucket, this will give complete control. Line the basket with green moss, if obtainable, and if so desired, place a sheet of polythene over the moss, making sure the polythene is pierced with several small holes at the base, to ensure essential drainage, the lining of polythene will assist with the drying out of the basket during warm summer months.

Polythene alone, can be used for the lining and dispensing with the moss, but if the basket is not covered with foliage and bloom, will look rather unsightly. When the basket is lined, nearly fill, either with John Innes No. 2, or soil less compost, having previously placed a fair quantity of peat on the bottom beforehand. Regarding the compost, John Innes will make the basket very heavy and although not very partial to "Levington", have used this soil less compost with success, with only a fraction of the weight problem. Planting should be performed with care, each plant not planted vertically, but at an angle of 45° around the edge of the basket, when completed, the plants will be in a slightly trailing position, this will leave a space in the middle, plant one small plant if you so wish, but from experience find it is not necessary as the spread of growth will very quickly cover the whole basket. Each plant is nicely firmed in, leaving the top with a saucer shaped depression for watering purposes. Water well in with a fine rosed can, place in a shady position for a few days, before bringing out for placing in its final position. Hanging baskets when watered can be of considerable weight, never suspend from the sash bars or even from the rafters, until it is sure the structure will bear the weight.

Half baskets, or to be more correct, wall baskets can be planted exactly the same, with the same cultivation, suggesting two plants for 10 or 12" baskets and three for 14", these are judged from the front and side views only, the measurements being taken as the maximum across the back.

Finally, fuchsias can be trained to many other forms, such as conicals, cordons, espaliers, pillars, pyramids, trailers and even climbers, very rarely seen these days, but will be all included in a fully comprehensive book, to be published at a later date.

**STOPPING** plants can be timed accurately for certain dates, but the general guidance, so often quoted of 6 weeks for singles and 8 for doubles is, however, rather loose. To obtain a plant of good shape with the maximum growth and bloom, it is necessary to pinch out the strong growths several times. When the growth is pinched out, the shoots stopped, should carry the very early, green buds, which are removed with the pinch. Any shoot with no sign of the bud should not be stopped, **unless** the operation of maintaining or shapening the plants is being carried out. On any such stopping, approximately 6 weeks will elapse before flowering, but this will be the initial flowering and not the flowering upon any of the secondary growths. For this secondary growth flowering, those shoots developing behind the main flowering shoot will need another two weeks to flower. When buds first show on one shoot, the period required for buds to appear on all growing tips is 10 to 14 days. It now follows that if blooms would appear in approximately 6 weeks after the stop, the main flush will follow approximately two weeks later. It is therefore, considered more correct to allow 6 to 8 weeks for singles and 8 to 10 weeks for doubles, bearing in mind also, the early and late flowering varieties. Early flowerers are varieties such as Snowcap, Red Spider, Marinka, Bon Accorde and many others, whilst some of the late flowers include such varieties as Peppermint Stick, Leonora, Mission Bells and Flirtation Waltz.

**SHADING** is just an essential part of cultivation as any other, like most other plants under glass, fuchsias resent high temperatures, 65°F to 75°F would be ideal, but difficult during the summer. Shading at the correct time, late April onwards, will help to maintain this temperature, young and freshly potted plants can suffer serious checks, sometimes fatal, if exposed to continuous hot sunshine, shading also assists in helping out with the watering routine. Blinds, preferably of the lath type are ideal, but very expensive, green polythene blinds fitted inside are effective, but play havoc with the colour renderings inside. Blinds have the advantage that plants do not become drawn, during dull and wet spells, when not required.

"Nelton" produce a fine green, plastic, mesh, suitable for shading and produces excellent results, provided at least an inch gap is left between the glass and the mesh. Most growers, however, have to resort to some kind of permanent shading, this need not be coloured green, in fact, white is best because it reflects back more heat radiation.

"Summer Cloud", although a little messy to apply is very effective, one cheap method is to mix ordinary plain flour or whiting, mixed with water, and to aid adhesion, to add some salt, though a **little** size is better. Probably the best application is the comparatively, new, electrostatic, "Coolglass", instant mix with cold water, white in colour, instant on by spraying or brush, instant off by wiping off with a dry cloth, yet is absolutely fast to rain and harmless to plants or structures. Finally it is advisable to shade fairly lightly, at the commencement of the season, and once plants are in full bloom to apply an extra coat, which will prolong the life of the blooms.

**WATERING** is the 65,000 dollar question, "how and when do I water"? Watering is an important aspect of cultivation, master the watering can and 75% of greenhouse management is solved, have tendered a greenhouse for many a long year and admit, have yet to master the can. Sounds a silly question, but why do we water and what happens? To provide the necessary moisture content for the soil, releases the mineral salts, which are taken up as food by the plants, these are dissolved in the water and the solution is absorbed through the root hairs in the roots. The foods are left to nourish the plant, but the water is gradually transpired through the leaves, this process continues and water must be continually replaced. However, soil moisture must not be excessive, or the plant will be unable to breathe, more plants are killed by overwatering than by any other cause. Sufficient water is given only to moisten all the soil particles; as the exact quantity is virtually impossible to estimate, surplus water is disposed of by drainage. When watering cuttings, rooted cuttings, repotted or potted-on plants, always use the overhead method by means of a fine rosed can, this settles the soil and prevents the hardening or caking of the top soil, never water plants direct from the spout, until they are established in their final pots, or root bound.

The old fashioned way of testing for water was the tapping stick, each pot given a sharp rap, producing either a ringing sound for dryness, or dull and dead if present of moisture was present. Nowadays, plastic pots being almost universal, coupled with the combination of soil less composts, this method of testing is useless; the best and safest way is to judge by weight. This may take a little longer, but in a short time experience will tell when a pot is picked up, whether it is heavy or light, if heavy leave well alone, if light, water well, and if in doubt, leave it until next time.

When watering is carried out, really soak the soil, let it dry nearly out and then water well again, never give little dribbles every day, the quickest way to kill any plant.

Remember fuchsias generally, are thirsty plants, like to be cool at the roots and need more water than plants such as geraniums.

Be guided by the weather, more moisture is needed at times when transpiration is greater, by the size of the pot, more water needed by small pots than large pots, by the growing conditions of the plant, a fuchsia plant fully grown with a pot full of roots, will take any amount of water, provided it has adequate drainage, whereas a very critical time for watering is just after potting on.

All plants should be treated individually and watered when necessary, it is a bad gardening practice to treat a whole batch of plants exactly the same. Water from top and not from the bottom, saucers are a luxury to all plants and if any excess of water remains after watering, should be drained away. Always try to finish watering before early afternoon, try not to water at night, although most of us have to earn a living during the day and probably forced as the only solution, it is, however, a bad practice, the reason being that we are already adding, to the moisture already in the night air, which cannot be absorbed, in many cases can be the cause of flowers and blooms damping off and the dropping of buds.

Most beginners are guilty of overwatering, symptoms are the yellowing of the leaves, wilting and leaf drop, wilting is not, however, a general symptom and can be caused by underwatering, or too high a temperature. Tap water is invariably cold and hard, but not detrimental to fuchsias, on the otherhand should you be able to collect soft, rain water, this is better, the answer really lies in the question "do fuchsias like lime"? and the answer is, not particularly, but will tolerate it.

Fuchsias in pots outside will even need watering, at times, when it is raining, it takes at least four hours of continuous rain to soak potted fuchsias outdoors, to the same level of moisture content, performed by the conventional method of watering with a can. It is not generally accepted, but a fuchsia only really grows and develops just before it needs watering, that is the time to water.

**WINTER CARE** with this aspect of cultivation, two points should be borne in mind, the fuchsia being a shrub needs a certain period of rest and during that time it is necessary to keep alive the sap in the stems. Therefore, unless they are outside hardies, they must be kept frost free and given just enough moisture to keep the sap alive. Two sure ways of losing your plants, is to place them under the staging and **forgetting** them, or to let them become either dust dry, or frozen.

As a word of warning, you will not successfully overwinter any of the species or the triphylla hybrids, such as Thalia etc. except *magellanica* types or *procumbens,* which are hardy in most districts, without a temperature of 40°F to 45°F. The places where you will safely overwinter your plants are:-

| | |
|---|---|
| (a) Heated Greenhouse | (b) Cool or Cold Greenhouse |
| (c) Garden Frame | (d) In the Ground |

Should your greenhouse be heated, no further advice need be given as 34°F will protect them, they will in fact even stand 2 or 3 degrees of frost, provided it is not of prolonged duration.

Plants should finish their flowering naturally, lift the half hardy varieties bedded in the garden as early in October as possible and house them under glass, but ease off the watering, letting the soil become on the dry side. This action will retard growth, plants will show the yellowing of leaves and in due course will shed all leaves, buds and flowers if remaining. Do not prune your plants at this stage, but any large plants can be moderately shapened, by cutting away approximately one third of its growth.

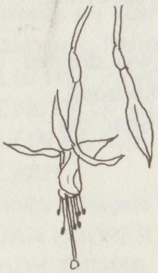
Plants stored for the winter must be stored in a dry place, which apart from the greenhouse, could be a shed, garage, cellar or spare room, but frost free, remembering tall plants such as standards and tall bush plants are more vulnerable to frost than the shorter types.

Young standard growing on as whips, or any autumn cuttings should be kept growing in green leaf and need a temperature of approximately 45°F. With a unheated greenhouse, fuchsias will need protecting and when the plants have lost their leaves, usually early November, give your plants a good soaking and completely insulate the ball of soil and roots. This can be achieved by packing the pots with either peat, sand, ashes, old potting soil or leaves, ensuring the whole pot is covered, together with the lower part of the stem, the upper part can be covered with such material as brown paper, this operation can take place under the staging if necessary, but not forgetting them. During the winter storage, it will be necessary to check your plants over, making sure the soil ball is moist, but not the wood, such plants can be left until the early spring, March time, then uncovered, carefully pruned, watered and placed back on the staging, repotting if necessary.

With garden frame protection, plants overwintered should be slightly pruned and supporting canes removed, usually about the middle of October, according to weather conditions. The plants are given a good soaking and pots placed as closely as possible in the frame, completely covering each pot and stems with peat, sand, ashes or leaves. Tall plants such as standards, should be laid on their sides, filling up with the shorter types. Leave the frame lights off until the first real frost, usually in November, after which the frames are closed, except for an opening of an inch or so to allow for a current of air, necessary for ventilation. The frame and its plants can then be left for the whole winter, left until the early spring and no harm will come to them. Should you have no glass or cover protection, the last method is to put them under the care of Mother Nature, by burying the plants in the open ground. Dig a trench some 2 feet deep and 18 inches wide, after trimming and removing the canes, place the pots close together in the trench on their sides with the stems and branches overlapping the next pot. Fill the trench with either sand, peat, ashes or leaves, soil is not favoured as it encourages pests and worms, whilst a certain amount of damage can be made to any new growth when lifting.

Continue to fill the trench, making a mound over the plants, much like a clamp of potatoes or dahlia tubers. The essential point to remember is that the plants must be well buried in order that the frosts cannot penetrate. Plants buried in this manner will withstand the vigours of any hard winter, are lifted very carefully in April, should be ready for pruning and repotting soon after and stood outside from mid May onwards.

**OUTDOOR CULTIVATION and HARDIES** one of my conclusions concerning the cultivation of fuchsias, is that they grow better and more prolific with bloom when grown outside, than when cultivated under the protection of glass. Some books describe the fuchsia as a tender, greenhouse shrub, which is hardly true, most species are found on rain drenched mountain slopes, or in dense evergreen forests, in regions which can be 7000 to 15000 feet above sea level, at this height it is always cool with plenty of moisture. One of the species *F. magellanica,* was found high up in the mountains of the southern most part of South America, where the weather is often much worse than our own. The early hybridizers used this specie as a parent and as a result many of the modern hybrids and varieties have a varying degree of *magellanica* blood, one reason why our fuchsias are much hardier than considered to be. It is not necessary to own a greenhouse to grow good fuchsias, the late W. P. Wood, who wrote a very comprehensive book on fuchsias, grew thousands of plants, exhibited at R.H.S. Halls and possessed nothing more than cold frames.



*magellanica alba*

Which are the ways we can grow our fuchsias outdoors?

(a) in pots or containers for patio, terrace or garden decoration.
(b) as half hardies in the garden or the border.
(c) as permanent shrubs or hedges.

**For pots and containers,** the best plants are 2—3 or 4 year old plants, which have received the protection of any frost free conditions, pruned and repotted if necessary, potted on again as the circumstances permit. The time to place these outside will depend upon location and weather conditions, under normal conditions, towards the middle or end of April, placed where they would receive all the possible sun, but protected from cold winds. Being in pots, is an easy matter to watch weather conditions and if frost threatens, bring them under shelter, or to protect them with some suitable covering for the night. When the danger of frosts has passed, the plants can be positioned for the summer and although a semi-shaded spot is ideal, will take full sun if necessary; as the pots dry out very quickly when the plants are established, they should never lack moisture, requiring frequent watering.

Normal fuchsia cultivation should be carried out such as stopping, feeding and staking.

**As half hardies,** with this method we obtain the finest display possible, the plants used should have received the normal winter care, together with early spring cultivation of pruning, repotting, and if possible of potting on.

The ground or border should be well prepared and well drained working in plenty of peat, the time for planting depends upon the weather conditions, usually the last week in May, when the danger of air frosts have passed.

We have a choice of two methods:-

(a) planting direct ex pots
(b) planting in the ground in pots

Planting ex pots will produce the best display, this method will reduce the watering and enable the plants to obtain a better root run, but will mean autumn lifting and potting up again in pots.

To compensate for this, a better and longer flowering period and should autumn cuttings be required, will produce far superior and more numerous.

It is easier with the second method to plant out in pots, flowering will be a little earlier, due to restricted roots and the great advantage, come autumn, they can be lifted complete with pots.

The disadvantage is that of moisture, even with pots buried, will dry out quickly and especially during warm weather, the hose maybe, the only method to keep the plants moist. Less attention is needed in cultivation with both the half hardies and the permanent occupants, apart from the odd stopping, will produce neat bushes with prolific bloom.

A regular feeding programme should be executed, whilst the planting depth for both in and out of pots, should be fairly deep, approximately two inches below the soil level. As fuchsias are very shallow rooters, routine hoeing and forking over should be carried out with care, hand weeding is the solution. When selecting the site, choose one which will afford semi-shade, preferably one with sun in the morning and shade in the afternoon.

**Permanent Shrubs or Hedges,** used under this method, fuchsias can be flowered, either in beds or the borders, on the rockery and utilized as hedges or screens, producing a blaze of colour during July until the last frosts.

One word of caution, no tall plants such as standards or conicals, should be considered as permanent subjects and left outside for the winter. The range of hardy varieties is now considerably greater than most people realise, the days are past when all varieties were red and purple, something like 70 to 80 different varieties are now listed by various specialist fuchsia nurserymen catalogues, having counted no less than 51 in one list alone.

| | |
|---|---|
| ALIC HOFFMAN | Rose and white |
| BEAUTY OF CLIFF HALL | Pink and white |
| ELFIN GLADE | Salmon rose |
| FLASH | Magenta self |
| *gracilis variegata* | Silvery green and red foliage |
| JOAN COOPER | Rose opal and red |
| LADY THUMB | Carmine and white |
| MME. CORNILISSEN | Scarlet and white |
| NICOLA JANE | Scarlet and pink |
| ROSE OF CASTILLE | Purple and cream |
| ROSECROFT BEAUTY | Sport from Snowcap |
| SNOWCAP | Red and white |
| SUSAN TRAVIS | Deep pink and rose pink |
| TRASE | Cerise and white |
| *procumbens* | Hardy specie for the rockery |

These listed varieties are but just a few, having a colour combination other than red and purples, which are also very beautiful and include

BRILLIANT – BRUTUS – DR. FOSTER – MARGARET – EMPRESS OF PRUSSIA – MARY THORNE – TOM THUMB

*Tom Thumb*

Preparation of the site is the same as for half hardies, good drainage and plenty of peat, as the height varies considerably with the variety, plant the tallest at the back, with the smaller and dwarf varieties to the front. The planting time for hardies is the last week in May or early June, this will enable the plants to become established before the autumn, do not plant in the late summer or autumn, leaving little time for establishment, with subsequent loss.

Planting depth should be approximately two to four inches deeper than normal, this will protect the base during the winter and assist in producing early and necessary shoots from the base in the spring.

Let the hardies finish off their flowering naturally, do not prune in the autumn, should the plants, especially established ones have excessive growth, shapening will do little harm, but the reason for not cutting back is that the old growth will act as a certain amount of protection against the winter.

Should the winter be severe, cover the base of the plants with some protection, such as peat, sand or ashes, which can be removed when the old growth is cut back to nearly soil level, in the early spring, when the new growth is just appearing.

One final word, that of warning, when once established, hardies do resent moving and having their roots disturbed.

Suitable varieties for growing as hedges include:-
DR. FOSTER, DOROTHY, MARGARET, PHYLLIS, *riccartoni* and *magellanica alba.*

Rockery varieties need to be dwarf habit and include:-
CARMEN, DUNROBBIN BEDDER, *procumbens,* LADY THUMB, PAPOOSE, PUMILLA, TOM THUMB.

**PESTS** a point of commanding merit in favour of the fuchsia, is its immunity to most pests and diseases, which attack other greenhouse plants, while those grown outside suffer little; provided routine hygiene and regular spraying or fumigation is carried out, most pests can be kept at bay. The best preventative for attack, is the frequent and thorough spraying of the foliage, particularly the undersides of the leaves and if a regular programme, of either fumigating or spraying with combating chemicals is exercised, whether pests are present or not, no trouble will be experienced during the whole season. The following lists of pests looks rather menacing but in practice, all are rarely encountered.

**Aphids** whether green or blackflies, are most prolific of all insect pests, will attack fuchsias both under glass and in the open. The presence of greenfly is usually indicated by leaf curl, damage is caused by sucking the sap from the plant, their secretion encourages the growth of unsightly, sooty, moulds, which check the breathing pores of the plants. Their extreme rapid rate of increase needs careful watch and are protected by nature in such a way that solutions in water run off them and such wetting agent or spreader is needed with sprays.

*Greenfly*

**Ants** can be very troublesome by tunnelling and moving soil about and find dry atmospheric conditions to their liking.

Although they do little actual damage, are responsible for the spread of aphids, particularly the greenfly and also of mealy bug.

**Capsid Bugs** when your shoots go blind, this is the insect to look for, will attack plants outside more than those grown under glass. Can be either green or brown in colour, looks like an overgrown aphid ¼" to ½" in length. Damage caused by sucking sap from the growing tips, causing both distortion and the growing tip going blind.

*Capsid*

Other symptons are brown marks on foliage taking the appearance of being blistered, small holes in the leaves and distorted.

**Caterpillars** another pest usually found outside, but can be troublesome in the greenhouse. Many of them are night feeders, and not easy to locate, lay their eggs upon the foliage, these hatch out in a few days or weeks and in the larvel stage, can eat voraciously. Hand picking is probably the best remedy.

**Leaf Hoppers** are green in colour, smaller than the capsid bug, resembling a beetle more than the aphid about ¼" in length. The pest will attack the fuchsia in the same manner as the capsid. Rarely seen because they move rapidly when disturbed. Foliage has speckled surface, caused by insect feeding on the underside of the leaves.

**Mealy Bugs** one of the most difficult pests to eradicate, but fortunately not common in fuchsia collections. The creatures are white, waxy louse-like objects about ¼" long, easily seen and tend to congregate at the junctions of woody stems, especially on old established plants. Like other pests, live by sucking the sap from the plant and on account of the "honey-dew" they secrete, also attract the attention of ants.

**Red Spider** one of the most troublesome of fuchsia enemies, attacking both indoor and outdoor plants. Really a sucking mite and not a true spider, although it spins a web on the underside of the leaves. Dry and hot atmosphere encourages red spider, moist conditions are inimical to it. The mites are extremely small, sometimes only visible as a sort of rust on the underside of leaves. When attacked the tissues of the foliage are weakened, leaves turn bronze and yellow, completely dry up and fall. Persistence of this pest is encouraged in untidy houses, where the creatures can hibernate amongst the litter and brickwork crevices.

*Red Spider*

**Thrips** minute insects 1/10" long, tiny and elongated with four long, narrow, fringed wings, dark in colour in adult stage, but dirty white when young. Very difficult to detect, simple method is to place a sheet of white paper under the plant, when shaken minute thrips fall and can be seen as wriggling specks. Another insect which thrives upon hot and dry conditions, hates the sprayer, damage is done to the foliage by sucking the sap, causing the bleaching of the leaves, very often taking the

*Thrip*

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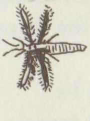


appearance of "pepper and salt". In the greenhouse, if not controlled, breeding goes on continuously.

**White Fly** needs little description for its identification, a tiny fly about 1/25th long and covered with a white wax to which its colour is due. Can produce several broods a year, when disturbed take off and fly to another cover, always on the undersides of the leaves. Eggs are laid in groups, the green larvae, hatch after about 12 days and feed upon the sap of the plant. The young produce a sticky excretion which covers the leaves of infected plants, often black in colour due to a fungus which grows upon it.

*White Fly*

An attack by white fly can be serious unless it is promptly checked in the early stages.

Was a serious problem to eradicate years ago but with the new chemicals now available, easily controlled.

**Wasps** although not really classified as a pest, can do untold damage in the greenhouse, resulting in half emasculated flowers, the staging littered with stamens and blooms left with sepals and bruised corollas. As wasps, together with bees are just flying visitors, are different to control.

Fuchsia pests and chemicals controlling them:-

| | |
|---|---|
| **Aphids** | are controlled by B.H.C., Lindane, Lindex |
| **Ants** | B.H.C., pyretheum |
| **Capsid Bugs** | B.H.C., Lindane, Lindex, malathion, nicotine |
| **Caterpillars** | derris, malathion |
| **Leaf Hoppers** | B.H.C., derris, Lindane, Lindex, malathion |
| **Mealy Bugs** | malathion |
| **Red Spider** | azobenzene smoke, derris, malathion |
| **Thrips** | B.H.C., derris, Lindane, Lindex, malathion, nicotine |
| **Wasps** | derris |
| **White Fly** | B.H.C., Lindane, Lindex, malathion |

**DISEASES** fortunately the fuchsia is not affected with many diseases and the few can be thwarted, by strict hygiene and cleanliness in cultivation.

No rubbish should be allowed to accumulate, staging should not harbour any old leaves or flowers, an untidy greenhouse encourages both diseases and pests.

**Botrytis cinerea** is, however, the most likely disease, easily identifiable by its grey, hairy mould and certain to appear on ripened wood during the winter months, if the ventilation is poor, coupled with no circulation of air, in other words, damp, cold and above all, stagnant conditions.

This fungus disease will also attack unripened growth during the spring and early summer, taking the form of leaves turning brown and even black before falling off. Entire shoots of young plants collapse, especially if the same cold and stagnant conditions exist and plants are too crowded together with little ventilation. The best preventive is to create a buoyant atmosphere, as a remedy use a fungicide such as Captan, Karathene or the very new Benlate, if a fumigant is desired, use tecnazene (T.C.N.B.) all of which will give control.

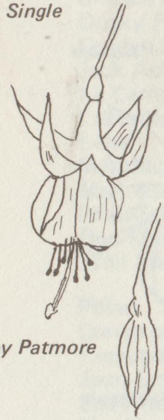
**Oak Fungus** can be mystifying when noticed, appears as a russet or orange brown, rust on the underside of the leaves and can quickly affect other plants. This fungus disease is more likely during a wet, cold, spring thought to come from composts containing leaf mould, second grade peat, or soil less composts, containing a very high mixture of peat, with cuttings forced under high temperatures in very moist conditions.

The remedy is to pick off all infected leaves and burn them, if not too deep seated, to spray the plants with a copper fungicide and stand the plants in the open.

**Fuchsia Rust** can easily be confused with oak fungus, symptoms are particularly the same, orange brown powdery patches, sometimes with reddish or yellow spots, again on the undersides of the leaves. Little is really known about this disease, although of recent years was identified by the Capel Manor Horticultural Centre as "Uredo fuchsiae" and the treatment recommended was to destroy all infected leaves, if the plants are not too seriously affected, to spray with Zineb or dust with Thirum, Captan has no control.

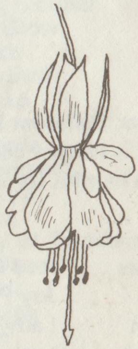
**VARIETIES – CULTIVARS** until recent times, new introductions were always referred to as varieties, but under the new terminology and to conform with the international usage of terms, the word cultivar, is often used to denote a plant variant, raised as a seedling or sport. In the strict sense, the word variety, should be specifically applied to variations of the species of the fuchsia. This word cultivar is derived from "Cultivated variety", referred to plants reaching their present form, through the work of hybridists and others, as distinct from the wild forms, which are known as species. To clarify the position, it is suggested the word variety should strictly refer to variations in wild forms, such as f. *magellanica alba* or *riccartonii,* and cultivar to variations in the cultivated forms, which now constitute the vast majority of fuchsias available from the nurserymen. It is, however, interesting to observe that the International Code of Nomenclature for Cultivated Plants (1961) uses both the terms cultivar and variety, as exact equivalents.

*Single*



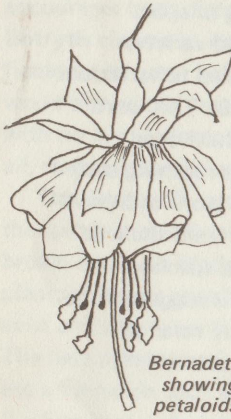
*Joy Patmore*

*Semi Double*

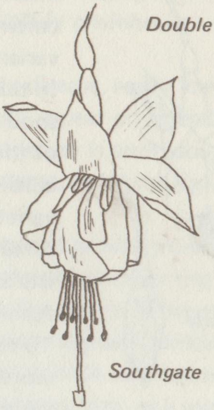


*Abbé Farges*

**Singles and Doubles** the fuchsia flower is classified into three catagories, flowers with four petals only, are considered as **single,** whereas a **double** bloom is classified as having many layers of petals, one that has more than the characteristic number of petals. The intermediate catagory is that of **semi-double,** those flowers having more than four petals but which cannot be classed as full doubles, usually semi-doubles consist of five to eight petals. Varieties known to be single, very often throw blooms with extra petals; for exhibiting purposes, these are classed as semi-doubles and should be shown in the classes for doubles. Some varieties can throw petaloids and whereas, the petal is a division of the corolla, a petaloid is described as being petal-like, as when the sepals or even the stamens have assumed the part of the petals. The accompanying drawings illustrate the differences between the various catagories.


*Bernadette showing petaloids*

*Double*


*Southgate*

**Varieties for Different Purposes** this list is a personal choice, stressing it is neither comprehensive or authoritative, but may be considered helpful for varieties suitable for training to various shapes.

**Bush**

Abbé Farges
Beacon
Billy Green
Bon Accorde
Brutus
Celia Smedley
Checkerboard
Citation
Display
Fascination
Flirtation Waltz
General Monk
Heidi Ann
Icecap
Iced Champagne
Joy Patmore
Lady Isobel Barnet
Lena Dalton
Leonora
Marin Glow
Mrs. Meike Meursing
Mission Bells
Pink Darling
Rufus
Snowcap
Tennessee Waltz
Tom Thumb
Winston Churchill

*Bon Accorde*

**Baskets (full or half)**
Blush of Dawn
Cascade
Crackerjack
Dusky Rose
Golden Marinka
Jack Acland
La Campanella
Lakeside
Lena
Mantilla
Marinka
Pink Galore
Red Spider
Trail Blazer

**Pillars**
Constance
Fascination
Joan Smith
Lady Isobel Barnet
Mephisto
Pink Pearl
Rufus
Snowcap
Swingtime

**¼ and½ Standards**
Alice Hoffman
Ballet Girl
Bon Accorde
Brilliant
Chang
Constellation
Countess of Aberdeen
Flirtation Waltz
Lyes Unique
Mrs. L. Swisher

**Espaliers**
Aunt Juliana
Fascination
Jack Acland
Joan Pacey
Lena
Miss California
Muriel
Pee Wee Rose
Swingtime
Violet Rosette
White Spider

**Pyramids**
Achievement
Brutus
Checkerboard
Dollar Princess
Fascination
Joan Smith
Lena
Mrs. Marshall
Mrs. L. Swisher
Marin Glow
Marinka
Molesworth
Snowcap

**Standards**
Achievement
Amy Lye
Barbara
Beauty of Trowbridge
Blue Waves
Brilliant
Charming
Clipper
Display
Dollar Princess
Duchess of Albany
Hidcote Beauty
Mrs. Meike Meursing
Mrs. L. Swisher
Pink Quartet
Southgate
Snowcap
The Doctor

**Weeping Standards**

Golden Marinka
Jack Acland
Jack Shahan
Lakeside
Marinka
Pink Galore
Red Shadows
Red Spider
Whirlaway
White Spider

**Easy Varieties** those growers with keen interest, but with perhaps a brief introduction to the fuchsia, may find this list helpful, as some of the easiest varieties to grow. Trying to select any "Top Ten", not necessarily the most popular, from between 4000 and 5000 is no easy task, but the beginner will find this short list will produce a magnificent display when in full bloom:-

| | |
|---|---|
| **Achievement** | single, a good old variety (1886), good for all types of growth, bush and standard, is almost hardy. |
| **Checkerboard** | single, always in bloom, very upright and vigorous, makes a large bush or standard. |
| **Display** | single, introduced in 1881, still takes a lot of beating and is good for either bush or standard. |
| **Leonora** | single, delightful pink, makes a good bush plant. |
| **Marin Glow** | single, one of the easiest to time, good for bush or standard. |
| **Mrs. Marshall** | single, another old variety, date unknown, yet to be beaten for versatility, can be trained for bush, standard and even basket work. |
| **Rufus** | single, one of the best reds, good bush or standard. |
| **Snowcap** | semi-double, upright bush will make a fine standard. |
| **Swingtime** | double, good American, the best of the red and whites, can be trained either as bush or for basket work. |
| **Tennessee Waltz** | double, another good American, suitable as bush plant |

When selecting this list, many others could have been "short-listed" which would include:-

Abbé Farges, Charming, Dollar Princess, Fascination, Flirtation Waltz, Joy Patmore, Mrs. Meike Meursing, Mission Bells, Pink Darling and Pink Quartet.

**TRIPHYLLA HYBRIDS** triphylla means three-leaved, "tri" meaning three and "phyllon" from the Greek meaning leaf, differing from the usual fuchsia as the leaves are in sets of three at each set of nodes, instead of the usual two. The foliage is attractive, usually very dark with coloured veins. The flower also differs, with its characteristic long tube, with its small corolla at the end, resembling a symmetrical star with four points, although occasionally found with six points. These hybrids of the first known specie *f. triphylla*, are among the most beautiful of fuchsias, the majority are the result of crosses between the specie *f. triphylla* and *f. fulgens* or *f. splendens* As all the parents are sub tropical in native habitat, they do need a little more attention, as they are all definitely frost-shy and need the protection of glass for overwintering, needing a minimum of $40^{\circ}$F during the winter months.

Thalia

Triphylla hybrids are profuse with their bloom, will make excellent bedding out plants, besides specimen pot plants, and most of them will stand more sun than other fuchsia variety. The following incomplete list are generally obtainable from most fuchsia specialist nurserymen.

| | |
|---|---|
| Billy Green | (English 1966) |
| Coralle | (Bonstedt 1906) |
| Gartenmeister Bonstedt | (Bonstedt 1906) |
| Heinrich Heinkel | (Rehnelt 1905) |
| Leverkusen | (Hartnauer 1928) |
| Mantilla | (Reiter 1948) |
| Mary | (Bonstedt 1905) |
| Thalia | (Turner 1855) |
| Traudchen Bonstedt | (Bonstedt 1905) |
| Trumpeter | (Reiter 1946) |

Traudchen Bonstedt

Gartenmeister and Thalia are the most popular as specimen bush plants, whilst Mantilla and Trumpeter are excellent subjects for basketwork.

**SPORTS** the only other method of obtaining new varieties, other than by seedlings, is by sports or mutations. A sport is a form of a plant, which arises spontaneously from an existing root or shoot, a natural break from the recognised character.

This incomplete list details only the well known sports:-

| | | |
|---|---|---|
| Cardinal Farges | from | Abbé Farges |
| Constance | ″ | Pink Pearl |
| Golden Marinka | ″ | Marinka |
| *gracilis variegata* | ″ | *gracilis* |
| Lady Thumb | ″ | Tom Thumb |
| Nina Wills | ″ | Forget-me-Not |
| Pink Bon Accorde | ″ | Bon Accorde |
| Pixie | ″ | Graf Witte |
| Rosecroft Beauty | ″ | Snowcap |
| Trewince Twilight | ″ | Marin Glow |
| White Pixie | ″ | Pixie |

**ORNAMENTAL** foliage varieties, the majority of fuchsias, are grown for the beauty and charm of their flowers, the relatively few ornamental or variegated varieties are exceedingly attractive and have not received quite the enthusiasm they deserve. The British Fuchsia Society and many of the local societies, now include a class for ornamental fuchsias and this short list of varieties, includes those considered to be still in cultivation:-

Autumnale
Burning Bush
Cloth of Gold
Golden Marinka
Golden Treasure
*gracilis variegata*
Green N' Gold
Rosecroft Beauty
Sunray
Wave of Life

Extra care is needed in their cultivation, preferring the compost on the dry side and not too much shade, preferring as much natural sunlight as possible.

**EXHIBITING** the cultivation for exhibition purposes is neither difficult or mysterious, they are grown exactly the same, except plants are grown more thoroughly and attention paid to detail, as the ultimate is for perfect specimen plants.

The daintiness and charm of the fuchsia is its true characteristic, many growers are content to grow just for their own pleasure and relaxation.

Shows, however, are essential, where the average enthusiasts can see expert exhibits, with a view of highering their own standards, seeing new varieties, and if so inclined, to place their own powers of cultivation before the public and fellow enthusiasts, these shows then become the fuchsia "shop window". Exhibitors should exhibit for what they can contribute and not for what they expect to receive from showing, can be great fun, provided it is entered into in the right spirit and does not create the urge to "win at all costs". The fuchsia in its natural habitat ranges from prostate, ground, plants to trees of great height; in this country, have to be grown artificially and if no effort made to train them, would be unmanageable and particularly for the showbench.

Fuchsias in pots are in their prime during their 2nd and 3rd year, after that period, begin to make heavy wood, but form a basis for exhibition plants whilst in their prime.

It is possible, although difficult, to obtain show plants from current growth, these will need protection and heat to attain the size required, but with soft growth may need considerable staking and supports, which although not offensive is undesirable, as short jointed plants are needed. In accordance with the standards, as approved by the British Fuchsia Society, judges will allocate various point awards as:-

| | |
|---|---|
| General Cultivation of plants | 6 points |
| Quantity and Quality of blooms | 6 points |
| Foliage | 6 points |
| Presentation | 2 points |

**Standards** a straight clear stem is the hallmark of a good standard, should have a nicely balanced head, with no gaps but abundance of bloom, any support, if necessary, should not be out of character with the thickness of the stem. When checking the length of clear stem, should be from soil level to the point where the lowest branch grows away from the stem. Measurements are quoted in the chapter for standards.

**Baskets** uniform growth with a abundance of flower to cover all sides of the baskets; no gaps and no part of the basket to be seen, when viewed from any angle at eye level. The top and centre of basket will be expected to be covered with foliage or bloom.

**Bush** most points are allocated to those plants with growth appearing from soil level, but the emphasis in this class will be for vigorous and symmetrical plants. Several growths from below soil level is the ideal, but only one plant is permissable.

Most judges will take the most likely exhibits from the bench, place on the ground and view the plant from every angle. Particular attention is paid to stakes, canes, and ties, which should be unobstrusive and hidden wherever possible. Foliage should be clean, healthy and above all, free from pests and yellowing of the leaves.

**Cut Blooms** blooms should be perfect, any blooms which are premature in opening, bruised, or faded, will all lose points, should be typical of its variety, both as to colour and shape. Should be fresh, this will be shown by the colour of the pollen, which will have darkened to brown, on a bloom which has past its best.

The perfect bloom can be described as one that carries just a **little** pollen, enough to attract the pollinating insects, and no more. The sepals should be evenly spaced and undamaged, with four in number, sepals of three or five are not typical of variety. In this class, judges very rarely ever see six perfect blooms and to achieve the freshness which is essential, suggest they be gathered and staged a few hours before judging.

**Single and Double Blooms** particular attention is paid to classes which contain the wrong blooms, in the single and double classes.

All semi-double flowers should be exhibited in the classes for doubles, single flowers will be judged by the number of petals, those with four petals only, catalogue descriptions are not accepted in these instances. Some single flowered varieties, especially with over-feeding, will occasionally throw semi-double blooms, Tom Thumb being a particular variety in point, should there be only a few offending blooms, it is wise to remove them or show the plant in the double class.

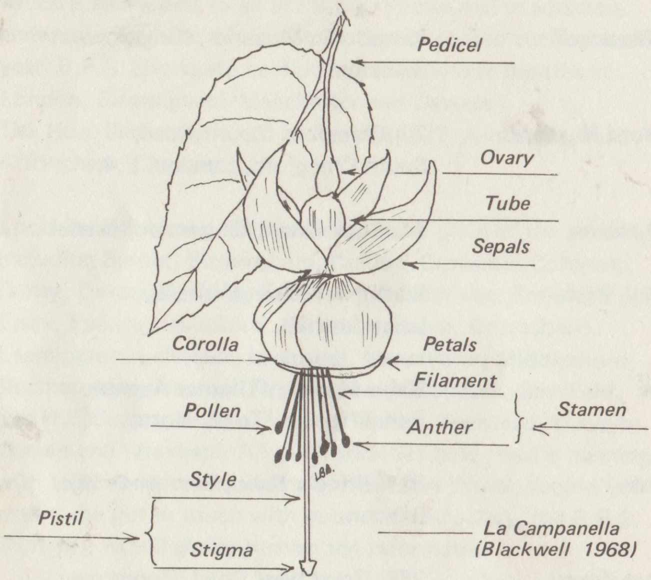
Presentation should not be overlooked, where classes call for more than one pot, watch for colour blending, in three pot classes and others, lift either the back plants or the front ones, if needed, to obtain correct balance.

The popping of premature blooms is not now favoured and is of no advantage to the exhibitor, but any blooms which need just a little assistance to make them fully open, can be safely undertaken. Most judges are available after the judging and exhibitors need never be nervous in approaching them for advice, guidance, and general information, in this way growers can improve their standard of culture and presentation.

**SOURCES OF SUPPLY** for plants. Fuchsia plants should be obtained from specialist fuchsia nurserymen, this incomplete list is included for guidance:-

| | |
|---|---|
| **B. and H. M. Baker** | Bourne Brook Nurseries.<br>Greenstead Green, Halstead, Essex. |
| **John Blackwell** | Kingsdown Nurseries, Kingsdown,<br>Swindon. |
| **Chingford Nurseries** | 20, Chingford Mount Road,<br>South Chingford, London. E.4. |
| **C. S. Lockyer** | 74, Cock Road, Kingswood, Bristol. |
| **R. and J. Pacey** | Stathern, Melton Mowbray,<br>Leicestershire. |
| **G. Roe** | Gable Nursery, Thomas Avenue,<br>Radcliffe–on–Trent, Notts. |
| **J. Travis** | 394, Brindle Road, Bamber Bridge,<br>Preston. |
| **Vicarage Farm Nurseries** | 256, Great West Road, Hounslow,<br>Middlesex. |
| **E. J. Wills** | Chapel Lane, West Wittering,<br>Chichester, Sussex. |

**FUCHSIA FLOWER TERMS** the accompanied drawing, together with the botanical terms for the different parts of the flower, will assist in the identification and naming the various parts which make up the complete flower.



| | |
|---|---|
| **Anther** | The male part of the flower which bears the pollen grains, is attached to the flower by a stem known as the **Filiament,** which together with the **Anther** is called a **Stamen.** |
| **Calyx** | The **Sepals** of the fuchsia, the outer covering of the flower. |
| **Corolla** | The inner circle of whorl of coloured petals above the **Calyx,** the most conspicuous part of the flower. |
| **Filiament** | The stem of the **Anther,** or stalk of the **Stamen.** |
| **Ovary** | Vessel containing the seeds of the plant, the seed berry or pod. |

| | |
|---|---|
| **Pedicel** | The stalk or stem of the flower. |
| **Petal** | A division of the **Corolla** of a flower. |
| **Petiole** | The stalk or stem of the leaf. |
| **Pistil** | The female part of the flower; collectively **Ovary, Style** and **Stigma.** |
| **Pollen** | The male fertilizing dust of flowers, produced on the **Anthers.** |
| **Sepal** | The separate divisions of leaves of the **Calyx.** |
| **Stamen** | The male organ of the flower consisting of the **Anther** with its **Pollen** and supporting stem **(Filiament).** |
| **Stigma** | The head or top of the **Pistil.** |
| **Style** | The stem bearing the **Pistil.** |
| **Tube** | Part of the flower containing the **Pistil** and forms the calyx bearer. |

## **GLOSSARY** of terms used in Fuchsia cultivation.

| | |
|---|---|
| **Anther** | for this and other parts of the flower, reference should be made to the sketch with accompanying terms. |
| **Balling** | the unfortunate conditions of buds of both single and double, which in very moist or wet conditions, decay in a half-open state instead of opening fully. |
| **Break** | a lateral growth developing from a main stem, can also be described as a branch or side stem when developed. |
| **Close** | with little or no ventilation. |
| **Crossbred** | a cross between a true hybrid and a distinct species. |
| **Double** | with many layers of petals, one that has more than the characteristic number of petals, botanically, double flowers are often described as "flore peno" abbreviated Fl. pl. |
| **Force** | to cause to grow quickly under the stimulus of heat. |
| **Heel** | shield of older tissue, retained at the base of some cuttings. |
| **Hormone** | chemical compounds exerting a marked influence on rooting. |
| **Hybrid** | a cross between two distinct species. |
| **Leaf Axial** | the angle between the main stem and a leaf stalk. |
| **Loam** | good fertile soil, usually containing much clay. |
| **Mutation** | change of character and heredity caused by irregular interchange of chromosome, sudden variation from the true type. |
| **Node** | part of a stem whence a leaf arises. |
| **Pinch** | to remove the growing point of a shoot, another term for stopping. |
| **Pollinate** | to fertilize by the transfer of pollen from the anther to the stigma. |
| **Potting-on** | the operation of moving plants from a small pot to a larger one. |

| | |
|---|---|
| **Potting "off" or "up"** | means potting seedlings, cuttings or plants for the first time. |
| **Potting back** | the rubbing off of the shoulders, of the ball of soil, and potting in a smaller pot. |
| **Repotting** | the term used for shaking out the soil from the old ball and potting back, either in the same size pot, or a small pot. |
| **Seedling** | a new variety or cultivar, raised from seed. |
| **Self-pollinate** | transfer of the pollen from the anther to the stigma of **the same flower.** |
| **Species** | a group of plants subordinate in classification of the genus, having members that differ only in minor details, possessing characteristics in common which indicate a common descent. |
| **Sport** | a variation from the true type, a natural break from the recognised character. |
| **Stopping** | term for removing the tip of a shoot to induce the formation of side shoots. |
| **Strike** | to cause (cuttings) to root. |

## MISCELLANEOUS WEIGHTS AND MEASURES

2 teaspoonfuls = 1 dessertspoonful
2 dessertspoonfuls = 1 tablespoonful
2 tablespoonfuls = 1 fluid ounce
20 fluid ounces = 1 pint
5 ounces of water = ¼ pint
1 gallon of water weights 10 lb.

### COMPOST NEEDED TO FILL SEED BOXES

| Standard 14 inch x 8½ inch seed boxes | Number filled per bushel |
|---|---|
| 2 inches deep | 9 |
| 3 inches deep | 6 |

### NUMBER OF SEED TRAYS THAT WILL STAND ON STAGING

(Standard 14 in. x 8½ in. trays)

| Staging width | 5 feet long | 10 feet long |
|---|---|---|
| 26 inches | 12 | 24 |
| 36 inches | 16 | 32 |

### NUMBER OF POTS PLACED SIDE BY SIDE THAT WILL STAND ON GREENHOUSE STAGING

| Size of Pot | 3 ft. length | 5 ft. length | 10 ft. length |
|---|---|---|---|
| Staging 2 ft. wide | | | |
| 3 inches | 90 | 150 | 300 |
| 3½ ″ | 72 | 120 | 240 |
| 5 ″ | 36 | 60 | 120 |
| 6¼ ″ | 21 | 35 | 70 |
| 7½ ″ | 14 | 27 | 54 |
| 8½ ″ | 10 | 16 | 32 |
| Staging 3 ft. wide | | | |
| 3 inches | 140 | 235 | 470 |
| 3½ ″ | 108 | 180 | 360 |
| 5 ″ | 54 | 90 | 180 |
| 6¼ ″ | 32 | 55 | 110 |
| 7½ ″ | 18 | 30 | 60 |
| 8 ″ | 15 | 25 | 50 |

Note: When spaced the width of a pot apart, four times the space is needed.

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